



# SCHOOL OF AERONAUTICS (NEEMRANA)

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## IAE-I-QUESTION PAPER

**FACULTY NAME: D.SUKUMAR**

**CLASS: B.Tech AERONAUTICAL**

**SUBJECT CODE: 6AN6.3**

**SEMESTER: VI**

**SUBJECT NAME: AIRCRAFT RULES & REGULATIONS – II**

Max Marks: 30

DATE: 30/01/2019

Duration: 1Hr 30Min

**Answer any five questions  
(4X7.5=30 marks)**

1. Discuss about the Salient Features of the CAR-66.

The CAR-66

- has been drafted in line with the current Rule 61 and to harmonise the aircraft maintenance personnel licensing system with EASA Part 66 ( General).
- details, requirements for qualifying an individual to obtain an Aircraft Maintenance Engineer's Licence and extension of such licence [CAR-66]
- eliminates the system of obtaining Airframe, Engine, Electrical, Instrument and Radio System Licences separately [66.A.03]
- redefines the syllabus for basic knowledge examination in modular pattern [66.A.25]
- provides for endorsement of an AME licence after successful completion of type training and the type training examination/type examination which shall consist of both theoretical and practical examinations [66.A.45 (c)]
- lists the details of practical tasks to qualify an individual to obtain a type rating [Appendix II to AMC]
- provides for acquiring group type rating of aircraft and certification privileges [66.A.45 (a)]
- has a provision to convert the existing AME licence to CAR 66 licence [66.A.70] with or without limitation.

2. Discuss about the Licence categories & Aircraft groups as per the CAR-66.

Licence categories

(a) Aircraft maintenance licences include the following categories:

- Category A
- Category B1
- Category B2
- Category B3
- Category C

(b) Categories A and B1 are subdivided into subcategories relative to combinations of aeroplanes, helicopters, turbine and piston engines. The subcategories are:

- A1 and B1.1 Aeroplanes Turbine
- A2 and B1.2 Aeroplanes Piston

- A3 and B1.3 Helicopters Turbine

- A4 and B1.4 Helicopters Piston

(c) Category B3 is applicable to piston-engine non-pressurised aeroplanes of 2000 kg MTOM and below.

Aircraft groups

For the purpose of ratings on aircraft maintenance engineers licences, aircraft shall be classified in the following groups:

1. Group 1: complex motor-powered aircraft as well as multiple engine helicopters, aeroplanes with maximum certified operating altitude exceeding FL290, aircraft equipped with fly-by-wire systems and other aircraft requiring an aircraft type rating When defined so by the DGCA

2. Group 2: aircraft other than those in Group 1 belonging to the following subgroups:

— sub-group 2a: single turbo-propeller engine aeroplanes

— sub-group 2b: single turbine engine helicopters

— sub-group 2c: single piston engine helicopters.

3. Group 3: piston engine aero planes other than those in Group 1.

3. Write about the Facility requirements according to CAR 145. A.25.

The organization shall ensure that:

a) Facilities are provided appropriate for all planned work, ensuring in particular, protection from the weather elements. Specialized workshops and bays are segregated as appropriate; to ensure that environmental and work area contamination is unlikely to occur.

1. For base maintenance of aircraft, aircraft hangars are both available and large enough to accommodate aircraft on planned base maintenance;

2. For component maintenance, component workshops are large enough to accommodate the components on planned maintenance.

b) Office accommodation is provided for the management of the planned work referred to in paragraph (a), and certifying staff so that they can carry out their designated tasks in a manner that contributes to good aircraft maintenance standards.

c) The working environment including aircraft hangars, component workshops and office accommodation is appropriate for the task carried out and in particular special requirements observed. Unless otherwise dictated by the particular task environment, the working environment must be such that the effectiveness of personnel is not impaired:

1. Temperatures must be maintained such that personnel can carry out required tasks without undue discomfort.

2. Dust and any other airborne contamination are kept to a minimum and not be permitted to reach a level in the work task area where visible aircraft/component surface contamination is evident. Where dust/other airborne contamination results in visible surface contamination, all susceptible systems are sealed until acceptable conditions are re-established.

3. Lighting is such as to ensure each inspection and maintenance task can be carried out in an effective manner.

4. Noise shall not distract personnel from carrying out inspection tasks. Where it is impractical to control the noise source, such personnel are provided with the necessary personal equipment to stop excessive noise causing distraction during inspection tasks.

5. Where a particular maintenance task requires the application of specific environmental conditions different to the foregoing, then such conditions are observed. Specific conditions are identified in the maintenance data.

6. The working environment for line maintenance is such that the particular maintenance or inspection task can be carried out without undue distraction. Therefore where the working environment deteriorates to an unacceptable level in respect of temperature, moisture, hail, ice, snow, wind, light, dust/other airborne contamination, the particular maintenance or inspection tasks must be suspended until satisfactory conditions are re-established.

d) Secure storage facilities are provided for components, equipment, tools and material. Storage conditions ensure segregation of serviceable components and material from unserviceable aircraft components, material, equipment and tools. The conditions of storage are in accordance with the manufacturer's instructions to prevent deterioration and damage of stored items. Access to storage facilities is restricted to authorized personnel.

4. Write about the Personnel requirements according to AMC 145.A.30 (b).

1. Dependent upon the size of the organisation, the CAR -145 functions may be subdivided under individual managers or combined in any number of ways.

2. The organisation should have, dependent upon the extent of approval, a base maintenance manager, a line maintenance manager, a workshop manager and a quality manager, all of whom should report to the accountable manager except in small CAR-145 organisation where any one manager may also be the accountable manager, as determined by DGCA, he/she may also be the line maintenance manager or the workshop manager.

3. The base maintenance manager is responsible for ensuring that all maintenance required to be carried out in the hangar, plus any defect rectification carried out during base maintenance, is carried out to the design and quality standards specified in 145.A.65 (b). The base maintenance manager is also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

4. The line maintenance manager is responsible for ensuring that all maintenance required to be carried out on the line including line defect rectification is carried out to the standards specified in 145.A.65(b) and also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

5. The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in 145.A.65(b) and also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

6. The quality manager's responsibility is specified in 145.A.30(c).
7. Notwithstanding the example sub-paragraphs 2 - 6 titles, the organisation may adopt any title for the foregoing managerial positions but should identify to DGCA the titles and persons chosen to carry out these functions.
8. Where an organisation chooses to appoint managers for all or any combination of the identified CAR-145 functions because of the size of the undertaking, it is necessary that these managers report ultimately through either the base maintenance manager or line maintenance manager or workshop manager or quality manager, as appropriate, to the accountable manager.

5. Explain the roles and responsibilities of Accountable Manager According to CAR 147 (BASIC).

The Accountable Manager is responsible for:

- Ensuring that all instruction and examinations carried out by the organisation meets the standards required by DGCA.
- Ensuring that the necessary finance, manpower resources and facilities are available to enable the organisation to perform the knowledge and/or practical instruction and examinations to which it is committed under the requirements CAR 147 (Basic).
- Chairing the annual meeting of senior staff to review the overall performance of the organisation.
- Ensuring that any charges are paid, as prescribed by DGCA.
- Ensuring that during periods of absence, control will be maintained for administration purposes by (Insert name/position in organisation), who will accept full responsibility for all training issues and related decisions.
- The operation of (insert name of organisation) is efficiently managed and conforms to the requirements of CAR 147 (Basic) as stipulated by DGCA.

6. Explain the roles and responsibilities of Training Manager According to CAR 147 (BASIC).

The Training Manager will undertake:

- The responsibilities of the DGCA nominated person at (insert name of CAR 147(Basic) organisation).
- The duties and responsibilities of the CAR 147 (Basic) approved examiner during any absence of the nominated person(s).
- The delegated duties and responsibilities of the Accountable Manager during prolonged absence. The Training Manager will ensure that:
  - The Accountable Manager is kept informed as to the state of compliance of the organisation with CAR 147 (Basic).
  - The operation of (insert name of organisation) is efficiently managed and conforms to the requirements of CAR 147 (Basic) as stipulated by DGCA.
  - Sufficient staff with appropriate qualifications are selected, trained and developed, to plan, perform, supervise, examine and assess students as required.
  - All necessary Airworthiness data published by DGCA and Aircraft manufacturers (where applicable) as appropriate, is made available.
  - All changes to the Exposition and associated manuals are notified immediately to DGCA.
  - The Exposition and associated manuals are amended as required.

- Knowledge examiners, instructors and assessors are fully trained and assessed regularly for competence and that all records pertaining to these personnel are kept up to date.
- Sub-contract staff including any part time staff conforms to the requirements of CAR 147 (Basic) and the training procedures.
- Office accommodation and facilities are available appropriate to the management of the planned training and for the use of training staff.
- Staff development and update training is undertaken and recorded.
- That all approved courses and examinations are delivered to the standard and content at the required level of knowledge, as specified in CAR 147 (Basic).
- A working environment is provided appropriate to the tasks being undertaken.
- There are sufficient storage facilities, tools, equipment, materials and publications available to perform the planned practical tasks.
- Secure facilities are available for the storage of examination papers prior to the examination and for the storage of completed students answer papers.
- The interviewing of students prior to, during and on completion of the course is effective and without bias.
- Student and staff records are produced and stored in secure conditions. • Any person to whom any of these responsibilities may be delegated is aware of current regulations.
- Corrective action is carried out for the findings of quality audits.
- The follow up and rectification of findings required to re-establish the required standards of training, examination or maintenance standards.
- Those sufficient questions are available to produce the examination papers required to cover the syllabus in accordance with CAR 66 Appendix II. Questions utilised for progress examinations (phase tests) should not be used in the final examination
- The security and validity of all examinations are in accordance with the requirements of CAR 66 and CAR 147 (Basic).
- All examinations and assessment time-tables are co-ordinated.
- Compliance with the examination question review procedures is as required by CAR 66 and/or CAR 147 (Basic).

7. Write about the Safety and quality policy, maintenance procedures and quality system according to AMC 145.A.65(c)(2).

1. An essential element of the quality system is the quality feedback system.

2. The quality feedback system may not be contracted to outside persons. The principal function of the quality feedback system is to ensure that all findings resulting from the independent quality audits of the organisation are properly investigated and corrected in a timely manner and to enable the accountable manager to be kept informed of any safety issues and the extent of compliance with CAR-145.

3. The independent quality audit reports referenced in AMC 145.A.65(c)(1) subparagraph 10 should be sent to the relevant department(s) for rectification action giving target rectification dates. Rectification dates should be discussed with such department(s) before the quality department or nominated quality auditor confirms such dates in the report. The relevant department(s) are required by 145.A.65(c)(2) to

rectify findings and inform the quality department or nominated quality auditor of such rectification.

4. The accountable manager should hold regular meetings with staff to check progress on rectification except that in the large organisations such meetings may be delegated on a day to day basis to the quality manager subject to the accountable manager meeting at least twice per year with the senior staff involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.

5. All records pertaining to the independent quality audit and the quality feedback system should be retained for at least 2 years after the date of clearance of the finding to which they refer or for such periods as to support changes to the AMC 145.A.65(c)(1) sub-paragraph 9 audit time periods, whichever is the longer.

8. Write about the Quality procedure according to the CAR-147 (BASIC).

1. The independent audit procedure should ensure that all aspects of CAR-147 compliance should be checked at least once in every 12 months and may be carried out as one complete single exercise or subdivided over a 12-month period in accordance with a scheduled plan.

2. In a small maintenance training organisation the independent audit function may be contracted to another maintenance training organization approved under CAR-147 or a competent person acceptable to the DGCA. Where the small training organisation chooses to contract the audit function, it is conditional on the audit being carried out twice in every 12-month period with one such audit being unannounced.

3. Where the maintenance training organisation is also approved to another CAR requiring a quality system, then such quality systems may be combined.

4. When training or examination is carried out under the sub-contract control system:  
I. a pre audit procedure should be established whereby the CAR 147 approved basic training organisation should audit a prospective sub-contractor to determine whether the services of the sub-contractor meet the intent of CAR 147. II. a renewal audit of the subcontractor should be performed at least once every 12 months to ensure continuous compliance with the CAR 147 standard. III. the sub-contract control procedure should record audits of the subcontractor and to have a corrective action follow-up plan.

5. The independence of audit system should be established by always ensuring that audits are carried out by personnel not responsible for the function or procedure being checked.

**THESE ARE THE POSSIBLE CORRECT ANSWER, in accordance with CAR-147,AAC-02, CAR-145.**